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10/629,815

07/30/2003

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43888-267

9492

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07/23/2009

EXAMINER

LEE, CYNTHIA K

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/629,815 | Applicant(s) OHZUKU ET AL. | |
| | Examiner CYNTHIA LEE | Art Unit 1795 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 14 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is responsive to the amendment filed on 5/26/2009. Claims 1, 3-9, 14, 16-18 are pending.

Applicant's arguments have been considered. Claims 1, 3-9, 14, 16-18 are finally rejected for reasons stated herein below.

The 35 USC 112, 1st paragraph rejection has been withdrawn because Applicant's arguments were found persuasive.

Information Disclosure Statement

The Information Disclosure Statement (IDS) filed 5/26/2009 has been placed in the application file and the information referred to therein has been considered.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-8, 14, 16-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ohzuku (Layered Lithium Insertion Material of $\text{LiCo}_{1/3}\text{Ni}_{1/3}\text{Mn}_{1/3}\text{O}_2$ for Lithium-Ion Batteries, Chemistry Letters 2001, the Chemical Society of Japan, pgs 642-643).

Ohzuku discloses a positive electrode material comprising the formula $\text{LiCo}_{1/3}\text{Ni}_{1/3}\text{Mn}_{1/3}\text{O}_2$ (see Abstract).

Ohzuku does not expressly disclose the crystal structure of the above formula as claimed by the Applicants in claims 1-4 and 6-8. However, the Examiner notes that while the prior art does not explicitly teach these properties, these are considered inherent in the prior art barring any differences shown by objective evidence between the positive electrode material disclosed in the prior art and the applicant. As the positive active material taught by the prior art and the applicant are identical within the scope of claims, 1, 3, 4, 6-8, Ohzuku inherently teaches the crystalline properties as claimed by the Applicants.

A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. In re Robertson, 49 USPQ2d 1949 (1999). The courts have held that claiming of a property or characteristic which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See MPEP 2112 and 2112.01.

When the Examiner has provided a sound bases for believing that the products of the applicant and the prior art are the same, the burden of proof is shifted to the

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applicant to prove that the product shown in the prior art does not possess the characteristics of the claimed product. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 14, Ohzuku discloses a $\text{Li/LiCo}_{1/3}\text{Ni}_{1/3}\text{Mn}_{1/3}\text{O}_2$ cell (see fig. 3). A cell necessarily contains an electrolyte.

The Examiner notes that Ohzuku meets the limitation "uniform dispersion" for the following reason. As Applicant indicated, red indicates high concentration, green represents a low concentration, and yellow represents an intermediate concentration. The Examiner disagrees with the Applicant that the instant invention has uniform dispersion because should this be correct, the micrographs of the instant invention should be all red, all yellow, or all green. The fact that the micrographs of the instant invention possess all three colors indicate that the dispersion is not uniform. The Examiner interprets that the micrograph of the prior art demonstrates "uniform dispersion" because it is mostly green.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1, 3, 4, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohzuku (Layered Lithium Insertion Material of $\text{LiCo}_{1/3}\text{Ni}_{1/3}\text{Mn}_{1/3}\text{O}_2$ for Lithium-Ion Batteries, Chemistry Letters 2001, the Chemical Society of Japan, pgs 642-643) in view of Ohzuku (JP 2002-042813, relying upon the English equivalent US 6551744 for translation).

Should the above 102/103 rejection not be anticipatory, Ohzuku '813 teaches of making a metal oxide as positive electrode materials by coprecipitation method (6:53-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the metal oxide of Ohzuku '390 by the coprecipitation method since it has been known to use the coprecipitation method to yield predictable results of making transition metal oxide for positive electrode materials.

It is noted that Applicants also use the coprecipitation method to produce positive electrode material. See instant Specification pgs 23 and 24. The Examiner notes that while the prior art does not explicitly teach the properties as claimed in claims 1, 3, 4, 6-8, these are considered inherent in the prior art barring any differences shown by objective evidence between the positive electrode material disclosed in the prior art and the applicant. As the positive active material taught by the prior art and the applicant are identical within the scope of claims 1, 3, 4, and 6-8, Ohzuku inherently teaches the crystalline properties as claimed by the Applicants.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohzuku (Layered Lithium Insertion Material of $\text{LiCo}_{1/3}\text{Ni}_{1/3}\text{Mn}_{1/3}\text{O}_2$ for Lithium-Ion Batteries,

Chemistry Letters 2001, the Chemical Society of Japan, pgs 642-643) as applied to claim 1 above, and further in view of Miyasaka (US 6416902).

Ohzuku discloses all the elements of claim 1 and are incorporated herein.

Ohzuku discloses particles but does not disclose primary particles and secondary particles as claimed in Applicant's claim 9. However, Miyasaka discloses a lithium ion battery comprising a positive electrode with a mean grain size in the range of 1 to 30 μm for secondary particles and in the range of 0.1 to 0.5 for primary particles (5:48-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have primary and secondary particles as taught by Miyasaka for the benefit of having two particle size distribution. Having two particle size distribution will enhance better packing of because smaller particles will be able to occupy void spaces between larger particles.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohzuku (Layered Lithium Insertion Material of $\text{LiCo}_{1/3}\text{Ni}_{1/3}\text{Mn}_{1/3}\text{O}_2$ for Lithium-Ion Batteries, Chemistry Letters 2001, the Chemical Society of Japan, pgs 642-643) in view of Ohzuku (JP 2002-042813, relying upon the English equivalent US 6551744 for translation) as applied to claim 1 above, and further in view of Miyasaka (US 6416902).

Ohzuku '315 modified by Ohzuku '813 teaches particles but does not disclose primary particles and secondary particles as claimed in Applicant's claim 9.

However, Miyasaka discloses a lithium ion battery comprising a positive electrode with a mean grain size in the range of 1 to 30 μm for secondary particles and in the

range of 0.1 to 0.5 for primary particles (5:48-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have primary and secondary particles as taught by Miyasaka for the benefit of having two particle size distribution. Having two particle size distribution will enhance better packing of because smaller particles will be able to occupy void spaces between larger particles.

Response to Arguments

Applicant's arguments filed 5/26/2009 regarding Ohzuku ('390) have been fully considered but they are not persuasive.

Applicant argues that in the instant Application, the elements are evenly dispersed and in Ohzaki CL-010390, segregation of Co is observed. It is noted that the Examiner has taken a different interpretation of "uniform" dispersion, and notes that micrograph of the prior art demonstrates "uniform dispersion" because it is mostly green.

Declaration submitted on 2/20/2007

As Applicant indicated, red indicates high concentration, green represents a low concentration, and yellow represents an intermediate concentration. First, the Examiner disagrees with the Applicant that the instant invention has uniform dispersion because should this be correct, the micrographs should be all red, all yellow, or all green. The fact that the micrographs of the instant invention possess all three colors indicate that

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the dispersion is not uniform. The Examiner interprets the micrograph of the prior art to have "uniform dispersion" because it is mostly green.

Applicant argues that the Examiner's interpretation of "uniform dispersal" is unreasonable because there is a significant difference between the uniform dispersal of the claimed composition and the prior art because the instant invention is more uniformly dispersed than the prior art that has well-defined, widely-separated areas of high and low concentration. The Examiner notes that the claim limitation "uniform dispersal" is not met in comparison of the instant invention, but by the interpretation of the claim limitation. It is reiterated that the Examiner interprets the micrograph of the prior art to have "uniform dispersion" because it is mostly green.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Lee/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art
Unit 1795